

CHAPTER 8.0: WATER SHORTAGE CONTINGENCY PLAN

8.1 STAGES OF ACTION

With population growth, energy shortages, earthquakes, and the threat of terrorism experienced by California; maintaining the gentle balance between water supply and demand is a complicated task that requires planning and forethought. In the event that a water shortage occurs, simple measures can be implemented to conserve the water supply at a public level. Below, stages are discussed during which various conservation measures will be imposed by the City of La Habra, beginning with voluntary conservation and leading to various stages of mandatory compliance in the event that the water supply experiences shortages up to a 50 percent reduction of the water supply. Implementation of the stages detailed below will occur on an emergency basis. A draft ordinance has been prepared and is included in Appendix K, to be adopted in the event of a severe water shortage.

Table 8.1 – 1 Water Supply Shortage Stages and Conditions		
Stage Number	Water Supply Conditions	Targeted Percent Shortage
Stage 1: Voluntary Compliance– Water Watch	Applies during periods when the <u>possibility</u> exists that the City will not be able to meet all of the demands of its customers.	0% to 15%
Stage 2: Mandatory Compliance– Water Alert	Applies during periods when the <u>probability</u> exists that the City will not be able to meet all of the water demands of its customers.	15% to 25%
Stage 3: Mandatory Compliance– Water Warning	Applies during periods when the City will not be able to meet all the water demands of its customers.	25% to 35%
Stage 4: Mandatory Compliance– Water Emergency	Applies when a major failure of any supply or distribution facility, whether temporary or permanent, occurs in the water distribution system of the State Water Project, Metropolitan Water District of Southern California, or City facilities.	35% to 50%

8.2 MINIMUM SUPPLY FOR THE NEXT THREE YEARS

In order to prepare for and prevent water supply shortage, it is useful to estimate the future minimum supply. The minimum water supply available to La Habra for next three years is estimated based upon the driest three year historic sequence, and is compared to a normal three year estimate. To balance the effects of multiple-dry years, more water will be imported from MWDOC resulting in an increase in the minimum supply during multiple-dry years compared to normal years.

Through regional modeling efforts, MWDOC has determined minimum water supplies available for La Habra for each of the next three years, 2006 through 2008. Table 8.2 – 1: Three-Year Estimated Minimum Water Supply (AFY) compares supplies available under normal conditions and supplies available under a hypothetical repeat of the historical driest three year period for La Habra, 1959–1961.

During multiple-dry years less local supplies are available for retail consumption and retail demands increase. To offset the reduction in local supplies, the use of imported supplies from Metropolitan increases. Even with the decrease in local supplies, La Habra is expected to meet all retail consumption during a three-year dry period of 2006–2008 based on the three driest years on record. In addition, Metropolitan is expected to be able to supply all of MWDOC's imported water during the same period. Metropolitan's 2005 Regional Urban Water Management Plan (Draft) indicates that Metropolitan can provide 100% of the supply demanded by its member agencies until 2030.

Table 8.2 – 1: Three-Year Estimated Minimum Water Supply (AFY)						
Source	Normal Year			Multiple-Dry Year		
	2006	2007	2008	2007	2007	2008
Local Supplies (CDWC and La Habra Basin)	9,297	9849	9849	9,297	9849	9849
MWDOC	3,007	2,455	2,455	3,734	2,854	3,057
Total	12,304	12,304	12,304	13,031	12,703	12,906

8.3 CATASTROPHIC SUPPLY INTERRUPTION PLAN

As a California jurisdiction, the City of La Habra could experience a catastrophic interruption in the water supply as a result of a regional power outage, earthquake, terrorism, or other event. A successful recovery plan is dependent upon an in depth understanding of the vulnerability of each source of supply, delivery system, and distribution system to potential catastrophes. Possible catastrophes are listed in Table 8.3 – 1: Preparation Actions for a Catastrophic Event and preparation actions being taken to reduce the severity of each event are discussed below.

Table 8.3 – 1: Preparation Actions for a Catastrophic Event	
Possible Catastrophe	Check if Discussed
Regional Power Outage	√
Earthquake	√
Terrorism	√

8.3.1 Regional Power Outage

As part of the proposed Idaho Street Well Capacity Improvements, La Habra is planning to install a diesel generator that will allow the well to continue pumping during a regional power outage. La Habra's water system has one back-up generator at one of its five booster pump stations. La Habra plans to include back-up generators to the remaining booster pump stations in future capital improvement projects. Thus, during a regional power outage it is anticipated that there will be problems distributing water supplies to La Habra's northern hills, as well as a portion of a neighborhood in La Habra's southern area. To address this concern, the City of La Habra plans to contact bottled water suppliers and tank trucks that can assist in providing water to the affected areas.

8.3.2 Earthquake

A seismic retrofit of the Puente Hills Reservoir was performed in 2003, which included an automatic seismic control valve installation. In the event of a major earthquake, the valve will

actuate and close the outlet piping ensuring that the reservoir does not release large amounts of water.

In addition, the West Ridge Reservoir utilizes a DYK manufactured tank. DYK tanks are pre-stressed concrete tanks designed with consideration of both vertical and horizontal accelerations, sloshing of water, and overturning moments. DYK tanks utilize cables that control the lateral seismic forces, while allowing free movement of the tank wall under normal tank loads. These concrete storage tanks have an inherent ability to withstand earthquakes and have displayed a track record of success.

La Habra has developed a comprehensive Emergency Response Plan to address the specific responses to earthquakes, damage assessments, evacuations, and major line breaks. The Emergency Response Plan also identifies agency and mutual aid contacts to help restore La Habra's critical water system infrastructure.

8.3.3 Terrorism

Per the requirements of the Bioterrorism Act of 2002, La Habra completed a Security Vulnerability Assessment to identify and propose mitigation solutions to prevent deliberately induced events. The planning scenarios included contamination, bomb threats, security breaches, and vandalism, all of which were analyzed in detail and documented in a confidential report.

The Security Vulnerability Assessment precipitated security enhancement recommendations that La Habra is currently implementing. Registered key locks were installed, which provide access only to the City of La Habra Water Maintenance personnel. Additionally, a reinforced reservoir ladder and a new access hatch have been installed to prevent security breaches.

In addition to these improvements, La Habra staff conducts reservoir inspections twice daily, and has increased security awareness as part of the public works operations policy. Perimeter fencing is in the process of installation at a La Habra Reservoir, and a SCADA system upgrade is currently in progress.

8.4 PROHIBITIONS AND CONSUMPTION REDUCTION METHODS

8.4.1 Water Shortage Planning

As part of the implementation of the regional Integrated Resources Planning (IRP), Metropolitan has developed a Water Surplus and Drought Management (WSDM) Plan for Southern California. This plan directs Metropolitan's resource operations to help attain the region's 100% reliability goal. The WSDM Plan was updated in 2004 to account for changes impacting supplies from the Colorado River and California's Bay-Delta. In the past, Metropolitan has developed drought management plans that simply addressed shortage actions and primarily focused on issues of short-term conservation and allocation of imported water. The WSDM Plan recognizes the interdependence of reliability. The overall goal of the WSDM Plan is to ensure that shortage allocation of Metropolitan's imported water supplies is not required.

La Habra has prepared a list of water conservation measures that shall apply at each stage of local water shortage. These measures, contained in Ordinance 1384, are detailed below and summarized in Tables 8.4 – 1: Mandatory Prohibitions and 8.4 – 2: Consumption Reduction Methods.

- During stage 1, all prohibitions and consumption reduction methods apply on a voluntary basis.
- During stage 2, prohibitions take effect on a mandatory basis.
- During stage 3, all elements of stage 2 apply including additional measures.
- During stage 4, all elements of stages 2 and 3 apply including additional measures.

Exemption(s): The prohibited uses of water are not applicable to that use of water necessary for public health and safety or for essential governmental services, such as police, fire, and other similar emergency services.

8.4.2 Mandatory Prohibitions

Table 8.4. – 1: Mandatory Prohibitions	
Prohibition	Stage When Prohibition Becomes Mandatory
1. Using Potable Water for Street Washing	Stage 2
2. Serving Water at Restaurants	Stage 2
3. Operating Ornamental Fountains	Stage 2
4. Issuing New Meters	Stage 3
5. Washing Vehicles	Stage 3, 4
6. Irrigating Vegetation	Stage 4
7. Filling Artificial Water Sources	Stage 4
8. Using Water For Agriculture and Nurseries	Stage 4
9. Watering Recreational Fields	Stage 4
10. Using Air Conditioning	Stage 4

1. Using Potable Water for Street Washing

Water shall not be used to wash down sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas, except to alleviate immediate fire or sanitation hazards.

2. Serving Water at Restaurants

Restaurants shall not serve water to their customers except when specifically requested.

3. Operating Ornamental Fountains

The operation of any ornamental fountain or similar structure is prohibited.

4. Issuing New Meters

New construction meters or permits for unmetered service will not be issued. Construction water shall not be used for earth work or road construction purposes.

5. Washing Vehicles

Washing of autos, trucks, trailers, boats, airplanes, and other types of mobile equipment is prohibited.

Stage 3 Exemption(s): Washing is permitted at any time on the immediate premises of a commercial car wash. The use of water by all types of commercial car washes not using partially reclaimed or recycled water shall be reduced in volume by 20%. Further, such washing are exempted from these regulations where health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

Stage 4 Exemption(s): Washing is permitted at any time on the immediate premises of a commercial car wash. The use of water by all types of commercial car washes not using partially reclaimed or recycled water shall be reduced in volume by 50%. Further, such washing are exempted from these regulations where health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

6. Irrigating Vegetation

All outdoor irrigation of vegetation is prohibited.

7. Using Water for Agriculture and Nurseries

Use of water for agricultural or commercial nursery purposes, except for livestock watering, is prohibited.

8. Filling Artificial Water Sources

Filling or refilling swimming pools, spas, ponds, and artificial lakes is prohibited.

9. Watering Recreational Fields

Watering of all golf course area, except greens, is prohibited. Watering of parks, school grounds, and recreation fields is prohibited.

Exemption(s): watering of plant materials classified to be rare, exceptionally valuable, or essential to the well being of rare animals is exempt.

10. Using Air Conditioning

No water shall be used for air conditioning purposes.

8.4.3 Consumption Reduction Methods

Table 8.4 – 2: Consumption Reduction Methods		
Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
1. Landscape Irrigation Days	Stage 2	25%
2. Vehicle Washing Days		
3. Artificial Water Sources		
4. Recreational Field Watering Days		
5. Fire Hydrant Restrictions		
1. Artificial Water Sources	Stage 3	35%
2. Fire Hydrant Restrictions		
3. Water Leak Repairs		
1. Fire Hydrant Restrictions	Stage 4	50%
2. Commercial Restrictions		

1. Landscape Irrigation Days

Lawn watering and landscape irrigation, including construction meter irrigation, is permitted only on designated irrigation days, but not between the hours of 10:00 a.m. and 6:00 p.m. any day. Water is permitted at any time if a hand-held hose with a positive shut-off nozzle is used, a hand-held faucet-filled bucket of five (5) gallons or less is used, or a drip irrigation system is used. A “designated irrigation day” is determined by the last digit in the street address. Properties with addresses ending in an even number may use water on even numbered days and addresses ending in an odd number may use water on odd numbered days.

Exemption(s): Agriculture users and commercial nurseries as defined in the Metropolitan Water District Code are exempt from Stage 2 irrigation restrictions, but will be required to curtail all non-essential water use. The watering of livestock and irrigation of propagation beds are permitted at any time.

2. Vehicle Washing Days

Washing of autos, trucks, trailers, boats, airplanes, and other types of mobile equipment is prohibited except on designated irrigation days between the hours of 6:00 p.m. and 6:00 a.m. the following morning. Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses.

Exemption(s): Washing is permitted at any time on the immediate premises of a commercial car wash. Further, such washing are exempted from these regulations where health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

3. Artificial Water Source Refilling Days

Stage 2: Filling or refilling swimming pools, spas, ponds, and artificial lakes is permitted only on designated irrigation days between the hours of 6:00 p.m. and 6:00 a.m. the following morning.

Stage 3: Filling or refilling swimming pools, spas, ponds, and artificial lakes is permitted only on designated irrigation days between the hours of 10:00 p.m. and 6:00 a.m. the following morning.

4. Recreational Field Watering Restrictions

Stage 2: Watering golf courses, parks, school grounds and recreational fields is not permitted between the hours of 10:00 a.m. and 4:00 p.m., except golf course greens.

Stage 3: Watering golf courses, parks, school grounds and recreational fields is permitted only between the hours of 6:00 p.m. and 6:00 a.m. the following morning, except golf course greens.

5. Fire Hydrant Restrictions

Stage 2: The use of water from fire hydrants shall be limited to fire fighting and related activities, for construction activities, or other activities necessary to maintain the health, safety, and welfare of the public.

Stages 3 and 4: The use of water from fire hydrants shall be limited to fire fighting and related activities, or other activities necessary to maintain the health, safety, and welfare of the public.

6. Water Leak Repairs

All water leaks shall be immediately repaired.

7. Commercial Restrictions

The use of water for commercial, manufacturing, or processing purposes shall be reduced in volume by 50%.

8.5 PENALTIES

The penalties imposed by the City of La Habra for failure to comply are summarized in Table 8.5–1 and detailed below.

Table 8.5 – 1: Penalties and Charges	
Penalties	Stage When Penalty Takes Effect
Written Notice	1 st Failure to Comply
Flow Restricting Device Installed	2 nd Failure to Comply
Discontinued Water Services	3 rd Failure to Comply
Charges	Stage When Penalty Takes Effect
\$35.00 Charge	2 nd Failure to Comply
\$70.00 Charge	3 rd Failure to Comply

8.5.1 Prior to Enforcement

Prior to enforcement, any person who is suspected of violating the Ordinance shall be given a written notice, with a description of the violation. Such person shall have 24 hours to correct such violation.

8.5.2 First Failure to Comply

For the first failure to comply, the City of La Habra will issue to the customer a written notice of the fact of such failure to comply.

8.5.3 Second Failure to Comply

For the second failure to comply, the City of La Habra will install, for a period no less than 48 hours and until the customer satisfies the City of La Habra that failure to comply will not continue, a flow restricting device in the customer's water service line. The charge for installing and removing the flow restricting device will be \$35.00 and will be paid by the customer prior to removal.

8.5.4 Third or Subsequent Failure to Comply

For the third or subsequent failure to comply; the City of La Habra will discontinue water service for a period of no less than 24 hours and until the customer satisfies the City that failure to comply will not continue. The customer will pay \$70.00 for restoration of water service.

8.6 REVENUE IMPACT ANALYSIS

In the event that a decrease in water supply occurs for an extended period of time, La Habra could face a potential loss requiring the Water Enterprise to draw from any reserves and also re-examine the revenue stream in order to balance the budget. It is thus important to consider possible measures to overcome revenue and expenditure impacts.

8.6.1 Measures to Overcome Revenue Impacts

Table 8.6 – 1: Proposed Measures to Overcome Revenue Impacts	
Names of Measures	Check if Discussed
1. Rate Adjustment	√
2. Water Fund Balance	√

1. Rate Adjustment

Should the City of La Habra experience a significant decrease in water supplies for an extended period of time, the City Council would consider a water rate increase or water fee surcharge to cover any revenue shortfall due to water shortages or conservation measures.

2. Water Fund Balance

La Habra maintains a Water Fund Balance that can be drawn upon for minor revenue shortfalls that need to be addressed immediately from decreased water supplies. The City Council would consider a rate increase to restore this fund for future unexpected emergency situations. Should the time period of the decreased water supplies be significant enough to exhaust the Water Fund Balance, then the City Council would consider a water rate increase or water fee surcharge as described above.

8.6.2 Measures to Overcome Expenditure Impacts

Table 8.6 – 2: Proposed Measures to Overcome Expenditure Impacts	
Names of Measures	Check if Discussed
1. Allocate Water Purchases	√

1. Allocate Water Purchases

La Habra is committed to purchasing a larger fraction of water from CDWC, which supplies water to La Habra at a less expensive rate than MWDOC.

8.7 REDUCTION MONITORING PROCEDURE

As part of the mandatory conservation phase implementation, La Habra will monitor the projected supply and demand for water by its customers on a daily basis. The City Manager shall determine the extent of the conservation required through the implementation and/or termination of particular conservation stages in order for La Habra to prudently plan for and supply water to its customers. Thereafter, the City Manager may order that the appropriate stage of water conservation be implemented or terminated in accordance with the applicable provision of the Ordinance.

Table 8.7 – 1: Water Use Monitoring Mechanisms

Mechanisms for Determining Actual Reductions	Type of Data Expected
1. Production Meter Readings	Total Gallons Per Day

1. Production Meter Readings

An analysis of the daily production meter readings will provide values for actual reductions in water use.